JSE CLEAR

IOSCO Disclosure Document

11 April 2017

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Responding institution:	JSE Clear
Jurisdiction(s) in which the FMI operates:	South Africa
Authority(ies) regulating, supervising, or overseeing the FMI:	Financial Services Board (FSB)

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The disclosure can be found at:	https://www.jse.co.za/services/post-trade-services/regulatory-compliance
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1. EXECUTIVE SUMMARY

This document provides an overview of the outcome of JSE Clear's detailed assessment against the principles featured in the CPSS-IOSCO "Principles for Financial Market Infrastructures (FMIs)". As a member of the G-20, South Africa (and its respective FMIs) is committed to comply with the principles and provisions of the CPSS–IOSCO report, as it is an integral part of the G-20's efforts to enhance the stability and integrity of financial markets. Consequently, as part of its compliance obligations, JSE Clear is required to adhere to the requirements of the CPSS-IOSCO disclosure framework – one of the stipulations of this framework is that the outcomes of an FMI's self-assessment should be structured for public disclosure, and it is in this light that this document has been created.

The contents of this document contain details of JSE Clear's 2016 self-assessment. Subsequent versions of this document will be published post the completion of successive self-assessments (the frequency of which is dictated by the regulator).

Of the 24 principles that from part of the CPSS-IOSCO "Principles for Financial Market Infrastructures" report, only 20 are considered to be relevant to JSE Clear due to the nature of its operations. Having completed the self-assessment exercise, JSE Clear is rated as "**Observed**" across 14 of these principles, "**Broadly Observed**" across 4 of these principles and deemed to be "**Partially Observed**" in terms of the remaining 2 applicable principles.

As such, JSE Clear is thereby considered to be fully compliant with the requirements put forth by IOSCO for Central Counter Parties (CCPs). The documents containing JSE Clear's detailed responses to the various questions that make up the IOSCO self-assessment (along with all associated reference documentation) have been submitted to the Financial Services Board (FSB) and have subsequently been reviewed and approved. This disclosure document provides a summary of the self-assessment content.

2. SUMMARY OF MAJOR CHANGES SINCE THE LAST UPDATE OF THE DISCLOSURE

During the last two years, the JSE has implemented several transformational enhancements to the JSE's risk management infrastructure, and managed day-to-day risk associated with providing a clearing service without incident. Notably, the following enhancements were designed to bring the JSE's post trade risk management capability in line with world class standards:

1. A comprehensive risk policy framework has been introduced. The JSE Clear Board has set the Risk Appetite to align with the JSE Group's overall strategy and company's objectives. Further to this, the JSE Clear Risk Management Framework has been introduced, providing a comprehensive overview of JSE Clear's risk management policies and procedures.
2. The policy that details the quantification, management and governance of the JSE Clear Default Fund was updated in to reflect that the default fund is quantified by considering stress testing results and to clarify the governance process should stress testing results indicate potential exposures larger than the default fund.
3. The mandate for the investment of initial margin funds and clearing member contributions to the default fund was reviewed and debated at various governance committees and was formally adopted.
4. A four phase review of the methodology used to calculate portfolio level initial margin requirements was initiated in August-2013, and has been completed:
    a. Phase 1 – the implementation of the new methodology for calculating contract-level Initial Margin Requirement (IMRs) for all derivative markets – was successfully implemented for all markets in Q2 2015.
    b. Phase 2 - a framework for addressing concentration risk – was approved in March 2015 and the first part thereof (addressing the risk presented by positions that will take longer to liquidate than is assumed under the standard J-SPAN calculation) successfully implemented in the equity derivatives market in Q3 2015. The second add-on (that addresses positions that are large enough to put JSE Clear's pre-funded default resources at risk) was implemented at the start of Q2 2016, without the ability to accept non cash collateral.
    c. Phases 3 and 4 in the initial margin review process speak to a review of parameters that govern the extent to which initial margin "offsets" are awarded when participants have simultaneous long and short exposures in different, highly correlated contracts (specifically calendar spread (CSMR) and series spread (SSMR) parameters). A proposal on refining these parameters was accepted by a market representative quantitative working group in Q4 2015, and was presented to various

governance committees in Q1 2016. We are currently in the process of developing an implementation framework for said proposal.

5. Much time has been spent with market participants engaging on and in researching legal matters pertaining to JSE's acceptance of securities as collateral for initial margin requirements. This has culminated in a set of draft rule changes and a proposed securities collateral policy that is currently in discussion with the various JSE Clear governance committees.

3. GENERAL BACKGROUND ON THE FMI

General description of the FMI and the markets it serves:

JSE Clear, a private company, is a wholly owned subsidiary of the JSE Ltd ("JSE"). JSE Clear is licensed by the Registrar of Securities Services as a clearing house as defined in the Financial Markets Act, 19 of 2012 ("FMA"). JSE Clear is the JSE's appointed clearing house, whose main objective is to clear and risk manage transactions in securities listed on the JSEs Derivatives or Interest Rate and Currency markets. These currently include equity, commodity and interest rate and currency derivatives as well as the spot bond market where guaranteed by JSE Clear.

JSE Clear operates as a central counterparty ("CCP") by imposing itself between parties to futures and options contracts traded on the JSE. JSE Clear also acts as collecting agent for all trading fees due to the JSE on those market transactions.

JSE Clear is responsible for the clearing of trades executed on the following markets:

- Equity Derivatives;
- Commodity Derivatives;
- Interest Rate Derivatives;
- Currency Derivatives; and
- Cash bonds – where traded through the central order book.

The following table provides a summary of the primary risks identified as being applicable to JSE Clear. These risks and mitigating actions are reviewed by the JSE Clear Risk Committee on a quarterly basis or more often where relevant. Moreover, these risks are accounted and monitored in the JSE Clear Risk Tolerance Policy.

Risk Event	Risks have been mitigated by the following actions
Systemic risk – Significant geo-political upheavals or macro-economic failures	• Ensure methodology used to define size of contributions to default fund is robust and supported by a prudent buffer • Stress event scenarios are used to assess adequacy of default fund and are continually revised • Default fund adequacy is regularly monitored and updated quarterly
Credit risk – Margin models fail to account appropriately for counterparty risk in line with JSE Clear risk tolerance as approved by the JSE Clear board	• Conservative margin methodologies (client level netting and high confidence interval) counterbalances concentration risk • Credible default waterfall structure assists in mitigating concentration risk • Investment policy has been reviewed to ensure diversified access to funds under default scenarios large SA clearing banks are well capitalised under Basel III, with diversified funding and revenue models • Greater participation in clearing process (self-clearing) is encouraged
Systemic risk – Significant geo-political upheavals or macro-economic failures	• Adequacy of current intra-day margining process has been reviewed • Regular and robust stress testing regime has been implemented • A comprehensive default procedure has been developed in order to enable market-wide fire drills
Credit risk – Margin models fail to account appropriately for counterparty risk in line with JSE Clear risk tolerance as approved by JSE Clear board	• Ensure margin models produce a reliable forecast distribution of exposures at both product and client level – regular model validation and back testing is now in place
Credit risk – Potential impact of tail risks not captured within initial margin model	• Regular reviews of the appropriateness, accuracy, reliability and resilience of JSE Clear's margin and stress testing methodologies • Both historical and hypothetical scenarios are applied for stress-testing • Conservative buffer has been applied to the default fund quantification

General organization of the FMI:

The JSE Limited has appointed JSE Clear as the clearing house to provide the JSE with clearing and settlement services for the JSE's markets, as contemplated in the FMA.

The JSE has appointed JSE Clear:

- as the central counterparty (CCP) in all Equity Derivatives, Commodity Derivatives, Interest Rate and Currency Derivatives and Bond market transactions concluded on the JSE's markets; and
- as collecting agent for all booking fees due to the JSE on those market transactions.

In order to optimise the operation of the clearing house, the company has appointed and therefore mandates the JSE to perform the operating functions, risk management services, declaration of defaulting members and clearing house services ("the services") on its behalf. The provision of these services is governed by the applicable agreements between the JSE and JSE Clear as well as the applicable JSE rules and directives.

Legal and regulatory framework:

JSE Clear, a private company, is a wholly-owned subsidiary of the JSE Limited. Both entities operate solely in South Africa under licenses granted by the Registrar of Securities Services in terms of the FMA- the JSE as an exchange and JSE Clear as a clearing house (which, based on the FMA, licenses must be renewed annually).

System design and operations:

As mentioned earlier, JSE Clear currently clears the following products:

- Equity Derivatives;
- Commodity Derivatives;
- Interest Rate Derivatives;
- Currency Derivatives; and
- Cash bonds – where traded through the central order book.

The JSE, as a registered exchange, runs the markets for the above products. The trading platform used by the JSE is called Nutron. When trades are matched on Nutron they are sent to a system called Nuclears which novates the trades to JSE Clear and allows for the clearing process to be initiated.

Positions down to client level are aggregated in the EOD batch run and are then run through Nuclears to calculate the Initial Margin, Variation Margin and booking fees. Amounts are then aggregated to the Clearing Member level and the margin called for by JSE Clear against the Clearing Member. Clearing Members must balance to JSE Clear before the payments are initiated. Once the Clearing Member has balanced to JSE Clear they call for payments from the Trading Members who in turn call for the payments from their clients.

Effective from 22 October 2012 JSE Clear moved onto the JSE Clear Payment Clearing House (JSE Clear PCH) which allows for the margin to settle through central bank funds. Amounts are netted across markets per Clearing Member and payment instructions generated through the settlement banks. Amounts need to be funded and paid by 12h00 on each business day.

4. PRINCIPLE-BY-PRINCIPLE SUMMARY NARRATIVE DISCLOSURE

As previously stated in Section 1 of this document, only 20 of the 24 principles that make up the CPSS-IOSCO "Principles for Financial Market Infrastructures" have been deemed to be applicable to JSE Clear (please see APPENDIX 1, the "CPSS-IOSCO Compliance: Rationale for "Non-applicable" Principles" memo for an explanation of these exclusions).

The following table provides an overview of JSE Clear's approach to observing the various principles:

Principle-by-principle summary narrative disclosure	
Principle 1 – Legal basis *An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.*	
Summary narrative	JSE Clear's operations as a clearing house within South Africa occur within a clearly defined and robust legal framework. This legal framework is grounded in the Constitution and the Promotion of Administrative Justice Act, 2000 as well as the rule of law and the principles of common law. Self-regulatory organisations, such as exchanges and clearing houses, are also subject to the provisions of the Financial Markets Act, 19 of 2012 ("FMA") JSE Clear, a private company, is a wholly-owned subsidiary of the JSE Limited ("JSE"), and both entities operate solely in South Africa under licences granted by the Registrar of Securities Services in terms of the FMA. Although JSE Clear is licensed as the appointed clearing house for the JSE, it operates within the regulatory framework of the JSE rules, and has mandated the JSE (in terms of a formal contract) to perform its operating functions, its risk management and clearing services, as well as decision-making regarding the declaration of defaulting participants. As part of its duty to regulate the markets conducted under its auspices, the JSE has issued a set of rules known as the "Derivatives Rules" and the "IRC Rules" (applicable to their respective markets). These rules form an overarching structure of regulation in terms of which the on-exchange

	derivative market is governed and to which all participants are bound. These rules also deal with and regulate all activities relating to JSE Clear clearing and settlement.
Principle 2 – Governance *An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.*	
Summary narrative	JSE Clear operates within a clearly defined and robust (statutory) legal framework, and within a clearly documented and applied corporate governance structure. As a wholly-owned subsidiary of the JSE, JSE Clear is required to adhere to the highest standards of corporate governance, as set out in the Companies Act, 2008 and the King III Code of Corporate Governance. Overall governance and direction of JSE Clear rests with its own Board of Directors, comprising a mix of JSE executives, clearing member representatives and independent industry experts. The Board is supported by a Risk Committee, Audit Committee and a Market Advisory Committee. JSE Clear's governance framework encompasses a memorandum of incorporation (required by statute, and which defines inter alia, the powers, duties and governance arrangements of JSE Clear) as well as a Board Charter, Committee Terms of Reference, and a Code of Ethics. Although JSE Clear is licensed as the appointed clearing house for the JSE, in practice it operates as an integrated part of the JSE and within the regulatory framework of the JSE rules. JSE Clear has mandated the JSE (in terms of a formal contract) to perform its operating functions, and its risk management and clearing services. This Clearing and Settlement Services Agreement ("CSSA") is supported by a series of service agreements which provide context to this operating relationship and provide the JSE Clear Board with a degree of control over the JSE resources providing the services on which it relies. Finally, as a wholly-owned subsidiary, JSE Clear is also subject to the oversight of the JSE Board and its Audit Committee.

Principle 3: Framework for the comprehensive management of risks *An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.*	
Summary narrative	The provision of sound and appropriate risk management is seen as JSE Clear's primary objective and an overall approach to risk has been adopted into business operations and is driven by the Board. JSE Clear has put in place a rigorous governance framework which starts at Board level and extends to operations. JSE Clear has developed a comprehensive and unambiguous risk tolerance statement to guide business decisions and resource allocation. The overall attitude to risk management is entrenched in the management of specific areas of risk spanning the business' operations. Risk management tools, risk triggers and mitigating actions are implemented in each area of the operation, and aim to highlight and monitor each type of risk applicable to the CCP. On-going risk identification, measurement, management, monitoring and reporting is paramount to JSE Clear's continued well-being. As such, JSE Clear has adopted a program of regular risk assessment, reporting and policy review to ensure comprehensive capture and management of potential risks to its business.
Principle 4: Credit Risk *An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.*	
Summary narrative	As a CCP, JSE Clear has potential exposure to 3 sources of credit risk (which is the risk of losses due to the default of a counterparty) – namely its clearing members, its settlement bank and its investment banks: • The largest contributor to JSE Clear's credit risk is the counterparty credit risk exposure it has to clearing members, through the clearing and settlement process. Should a clearing member default, JSE Clear

	is responsible for managing all of its open positions. Potential losses could arise from the closing of positions. • JSE Clear also faces credit risk from its settlement bank due to its role in the daily settlement process. • Lastly, all initial margin posted by clearing members are invested with a range of investment banks - should one of these banks default, JSE Clear also stands to lose the margin deposited with that bank. To mitigate its counterparty credit risk, JSE Clear employs stringent clearing member entry requirements (which are specified in the JSE rules), a system of conservative margining and a Risk Waterfall which includes a Default Fund. The size of the Default Fund is informed by a stress testing regime. These measures effectively mitigate the risk of a clearing member default. The introduction of the JSE Clear Payment Clearing House (PCH) on 22 October 2012 (using central bank funds with netting at clearing member level across markets) has largely eliminated the credit risk faced from the settlement bank. The credit risk arising from investment banks is managed through an investment policy, which specifies a minimum credit quality for investment banks and limits the concentration of funds with any one bank. JSE Clear uses a comprehensive stress testing framework to measure and manage counterparty and liquidity risk on a regular basis.
Principle 5: Collateral *An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.*	
Summary narrative	Cash collateral is currently the only form of collateral used to manage exposures. There is an initiative underway to enable the posting of securities and currency collateral which is expected to be implemented as part of the JSE ITaC project in 2017 for Equities and Currency Derivatives.

Principle 6: Margin	
A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.	
Summary narrative	JSE Clear has 3 types of margin: • daily variation margin (mark-to-market or MtM); • initial margin calculated using value-at-risk with a 1 day and 2 day holding period (initial margins are calculated per instrument type) – updated at bi-weekly; and • Possible intra-day margining in cases of extreme stress. Current exposure is the daily variation margin to be paid and initial margin which is a measure of Potential Future Exposure (PFE). Portfolios are margined under the JSE portfolio scanning method with offsets implemented for pre-specified groups of instruments only. Margins and risk parameters are very conservative, 99.7% confidence level and 2 day holding period. Margins are further calculated on an instrument level and offsets are allowed on a client level only. JSE Clear risk manages down to a client level. Margin is collected at a client level and paid to JSE Clear. No off-setting is provided for between a Clearing Member's clients. Systems, rules and policies are in place in order to calculate and implement margins and to manage the end-to-end margin collection process. The JSE Clear Market Advisory committee is consulted on all margin-related changes after which all changes are signed-off by the JSE Clear Board and then distributed via market notices and publication to relevant web sites.
Principle 7 - Liquidity Risk	
An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.	
Summary narrative	The nature of JSE Clear's daily liquidity flows are as follows: Clearing members must make or receive net variation margin payments to / from JSE Clear, based on their underlying client's position movements. These variation margin flows are processed through JSE Clear's settlement bank. Any new positions that are entered into or closed require net initial margin to be paid

	or received by JSE Clear, respectively. This initial margin is managed by JSE Clear and deposited into investment bank accounts, to be paid out when a position is closed out or used in the case of a default. This is in accordance with the JSE Clear Investment mandate. As such, JSE Clear's liquidity risk can stem from two sources - the default of a clearing member, or operational issues at any of the four role players in JSE Clear's daily liquidity flows (clearing members, settlement bank, investment banks or JSE Clear itself). JSE Clear manages its liquidity risk stemming from different role players as follows: • The liquidity risk stemming from clearing members is mitigated via the existence of stringent entry requirements to becoming a clearing member • The liquidity risk stemming from JSE Clear's settlement bank is mitigated through the PCH agreement • The liquidity risk stemming from investment banks is governed through JSE Clear's investment guidelines JSE Clear monitors liquidity flows through three processes: • the JSE Finance department monitors cash-flows daily • as part of the PCH agreement the SARB sends daily messages of payments in and out • JSE Clear's stress testing process includes liquidity risk stress testing, which involves identifying peak historical and possible future liquidity needs All of JSE Clear's cash-flows are in South African Rand. JSE Clear maintains dedicated liquidity lines with commercial banks to provide for potential liquidity needs.
Principle 8: Settlement Finality *An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.*	
Summary narrative	With the drive for further automation and better risk management capabilities (resulting from funds being transferred via central bank funds) JSE Clear has completed steps to: • Obtain protection in terms of the NPS Act in terms of payment finality and irrevocability; • Process the JSE Clear payments in central bank funds; and • Become a PCH System Operator (PSO).

	Although the previous regime provided sufficient clarity regarding the point at which settlement is final, the implementation of the new Payments Clearing House (PCH) project and the subsequent move to Central Bank funds has made this absolutely explicit. The implementation of PCH is a significant move, and will improve the sophistication of operations in the South African market, as well as our overall credibility.
Principle 9: Money Settlements *An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risks arising from the use of commercial bank money.*	
Summary narrative	JSE Clear has recently implemented its PCH project, making it a Payment Clearing House, and enabling it to make use of funds provided by the central bank. As such, its money settlements are conducted in central bank money.
Principle 10: Physical deliveries *An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.*	
Summary narrative	JSE Clear is responsible for the facilitation of the delivery process for commodities, bonds and equity physical deliveries. With specific reference to the commodities market, JSE Clear administers invoicing (to both buyer and seller) and VAT compliance with Clearing Members, guaranteeing that good delivery takes place. JSE Clear also approves the silo facilities, as well as vetting the silo operators. Physical delivery procedures are well documented, and understood by all parties involved in the process. JSE Clear clearly distinguishes the obligations of all participants in its rules, and has put in place mechanisms to ensure that these obligations (be they activity-based or financial) are continually met to the appropriate standards, and that known risks are mitigated effectively.
Principle 13: Participant-default rules and procedures *An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.*	
Summary narrative	JSE Clear has created a well-defined, recently refreshed framework of rules for defaults, and these have been supported with documented procedures and clear allocation of responsibilities, so that action could be taken quickly following a well-prepared approach.

	The market has been engaged extensively to review these procedures and reactions have been positive – all indications are that participants understand their obligations in a default situation, and feel comfortable that they can comply with these should they ever be required to. The JSE has developed a comprehensive test of the default procedural framework, which included the development of a testing schedule, engagement with all market participants to secure involvement in the test execution ("Fire-drills"), development of a procedural manual for both JSE Clear and Clearing Members etc. JSE Clear conducted a market wide default simulation during November 2016. The simulation completed was limited to a default in the currency derivatives market, and tested the procedures to be followed where the default of a client would result in a Trading Member default, which ultimately leads to the default of a major bank Clearing Member. A default simulation will be conducted at least annually going forward, and will endeavour (where possible) to include contagion considerations for linked markets (i.e. where a default on one of the JSE's markets leads to a subsequent default in one or more of the other markets).
Principle 14: Segregation and portability *A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.*	
Summary narrative	JSE Clear has the unique ability to fully segregate margin, collateral and positions between clearing members, members and their clients, offering far greater flexibility and protection to all levels of market participants. Segregation and Portability has been tested in the past and experience shows that JSE Clear is able to act with a great deal of independence when enacting transfers in its market (both in terms of legal authority, as well as from a system capability perspective). JSE Clear is acutely aware of the role it plays in maintaining the stability of the market, and has created the appropriate segregation and portability mechanisms to facilitate this.

Principle 15: General business risk *An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.*	
Summary narrative	JSE Clear has made enhancements to its already very formal governance and risk management structures: One of the key responsibilities of the newly constituted JSE Clear Risk Committee (created to provide dedicated focus on the management of JSE Clear -specific risks) is the ongoing monitoring and mitigation of general business risk. The risk resources of the CCP work in conjunction with the JSE's Post-Trade Services Risk Management head and are governed by JSE Clear's own Risk Management Framework. As a result, they are well positioned to defend JSE Clear against any business-risk related threat. The CCP is well aware of the potential for business losses – particularly those outside of the immediate control of JSE Clear – and has ensured that sufficient liquid resources exist to weather situations of extreme distress. These resources are monitored regularly, and have proven to be effective resolution tools when tested in the past. JSE Clear identifies and monitors general business risks through a comprehensive risk management framework. The Head of Risk Management is accountable for managing emergent and existing risks. These risks are reviewed quarterly via the formal risk assessment process. A draft of the new Recovery and Resolution policy is expected to be delivered in Q3 of 2017, and will be developed and rolled out thereafter.
Principle 16: Custody and investment risks *An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.*	
Summary narrative	JSE Clear policy for the investment of funds under management, is captured in the JSE Clear Investment Mandate where the primary aim is to minimize the risk exposure in these funds and thereafter maximize the investment income earned on funds invested. All these funds are administered and managed by the JSE on behalf of JSE Clear. The specific selection criteria are listed in the Investment Mandate, mainly that the banks should be registered and regulated in South Africa and that

	they meet the rating criteria. At present, all funds managed by JSE Clear are invested in a variety of bank accounts spread across a number of banks with a minimum of a "A-1+" or "A-1" rating, for terms between call and 180 days with a weighted average maturity not exceeding 50 days. JSE subscribes to a recognised credit agency and therefore will rely on their ratings in order to assess and compute credit limits for the banks used. JSE regularly checks the banks' ratings to ensure they meet the criteria for eligibility. Relevant extracts of the JSE Clear Investment Mandate describing the limitations to investment instruments, investment tenor and credit quality of institutions have been published on the JSE's website. This information can be found at the link below: https://www.jse.co.za/services/post-tradeservices/risk-management/derivative-market
Principle 17: Operational risk *An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.*	
Summary narrative	The primary sources of operational risks as per the Risk Assessment Framework (within the Risk Framework Policy Statement), are considered to be: • Information Technology • Internal Processes • People or Management Failure • The Framework is based on the COSO Risk Assessment Methodology, which is a best practice framework. In light of this, JSE Clear is satisfied that all applicable sources are contained within this structure. JSE Clear considers potential single points of failure to mostly exist in the realm of IT. With this in mind (and in light of the fact that the provision of systems is outsourced to the JSE) processes are in place to ensure that potential single points of failure are negated via architectural principles, technical implementation and stringent failover and DR testing. JSE Clear's official Recovery Time Objective (RTO) is 48 hours, which is well

	below the KC requirements in the PFMIs which recommend that an FMI should aim to be able to resume operations within 2 hours following a disruptive event; however back-up systems should commence processing immediately. A CCP experiencing a downtime of 48 hours could have a systemic impact on the market.
Principle 18: Access and participation requirements *An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.*	
Summary narrative	The membership requirements put forward by JSE Clear are transparent and fair, and have enabled the introduction and participation of a broad range of market participants. The membership requirements are focussed on ensuring that potential entrants are capable of fulfilling their various obligations, and will not introduce undue stress or risk to the rest of the market. Although enhancements to the monitoring of compliance will be implemented on an ongoing basis, JSE Clear has good visibility of the activities of its market participants, and a history of proactive intervention when necessary. The participation requirements are contained within the Derivatives Rules and Directives and the JSE Interest Rate and Currency Rules and Directives. These documents contain rules, typically relating to only capital requirements (for Clearing Members) - although there is a requirement of the appointment of a Compliance Officer. Additional reference is made to requirements relating to registered officers, and certain operational requirements. Further requirements are also detailed in the JSE Clearing Agreement and JSE Clearing member take-on procedure.
Principle 19: Tiered Participation Arrangements *An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.*	
Summary narrative	The JSE monitors and records all indirect participants' movements and accounts. In an effort to mitigate risks arising from tiered participation, the JSE takes into consideration concentration and large position risk. These risks are further managed through margining procedures. In terms of participation arrangements, the JSE currently allows for: • Direct Clearing Members who clear for themselves and their clients

	• General Clearing Members which clear for themselves and their clients as well as other Trading Members and clients • The Trading Members are also authorised and regulated by the JSE The structure of the market is: client to Trading Member and Trading Member to Clearing Members. All clients and Trading Members' accounts and positions are recorded on the JSE's systems. All Derivative Trading and Clearing Members have to apply for membership on the JSE and the JSE keeps a register of members. The register is updated whenever a new member is added or an existing member is terminated. There is also a requirement in the Rules that the Trading Members register various officers and dealers. Further to this, the Trading and Clearing Members have to do monthly capital adequacy returns. Lastly, all underlying clients have to be registered down to account-level on the JSE's systems. As mentioned above the JSE also monitors for position build-up (large positions) where an add-on margin is called for. Also, the JSE in terms of the Rules can request that a Trading Member reduces their positions.
Principle 21: Efficiency and effectiveness *An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.*	
Summary narrative	JSE Clear makes a concerted effort to maintain lines of communication with its market participants, so that it can keep track of its developing needs, as well as assess the degree to which its service provision is meeting market requirements and standards. Feedback on the degree to which customers are satisfied is elicited via both formal and informal mechanisms. In light of its continued focus on customer-centricity, JSE Clear places a high priority on efficiency and effectiveness. As a result, it actively looks for ways in which it can improve its internal operations, and consequently improve the efficiency of its service offering to the market (be it through the automation of manual processes, or in the alignment of processes with global benchmark and standards).

Principle 22: Communication procedures and standards *An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.*	
Summary narrative	JSE Clear maintains multiple lines of communication with the market, and shares information with participants in a prompt and formalised manner. JSE Clear's systems utilise a globally recognised and accepted messaging standard (namely SWIFT ISO 15022 messages) – and these messages are disseminated on a reputable and established network
Principle 23: Disclosure of rules, key procedures and market data *An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.*	
Summary narrative	The JSE has a comprehensive catalogue of policies and procedures, all underpinned by its market-specific "Rules and Directives" – the primary reference document to be used by market participants to determine their rights and obligations. This document is then supported by supplementary documentation that provides a lower level of detail for the various concepts stipulated in the "Rules and Directives". The JSE ensures that these vital reference documents are available to all parties that require details of the content held therein – where appropriate, this content is available for public access via the JSE website, or through contacting the JSE directly and requesting it.

APPENDIX 1: CPSS-IOSCO COMPLIANCE - RATIONALE FOR "NON-APPLICABLE" PRINCIPLES

Certain principles featured in the "CPSS-IOSCO Principles for Financial Market Infrastructures" have been deemed as not being relevant to JSE Clear. Of the 24 principles that have been published by IOSCO, only 20 are considered to be pertinent to the CCP, meaning that 6 are viewed as being "non-applicable".

There are 2 primary reasons for the exclusion of these 4 principles:

1. Section 1.21 of the "CPSS-IOSCO Principles for Financial Market Infrastructures" states that "*Most principles in this report are applicable to all types of FMIs covered by the report. However, a few*

principles are only relevant to specific types of FMIs". Further to this, "Annex E" of the same document explicitly defines the applicability of the various key considerations to specific types of FMIs. JSE Clear is a CCP, and as such, Annex E specifies that:

i. Principle 11 (Central Securities Depositories) and
ii. Principle 24 (Disclosure of Market Data by Trade Repositories)

are not relevant to CCPs, and can therefore be excluded from JSE Clear's self-assessment.

2. Due to the nature and design of the clearing and settlement service provided by JSE Clear for the equities derivatives market, 2 of the IOSCO principles have been deemed to be non-applicable because they make assertions about the functions of a CCP that are not true for JSE Clear. The 2 principles to which this applies are:

   i. Principle 12 (Exchange-of-value Settlement Systems)
   ii. Principle 20 (FMI links)

The following table provides a summary of the rationale for why the 4 "non-applicable" principles have been given this status:

Principle #	Principle Name	Reason for "Non-applicable" Status
11	**Central Securities Depositories**	This principle is not applicable to CCPs, in terms of Annex E of the "CPSS-IOSCO Principles for Financial Market Infrastructures" – therefore no responses have been given to these questions
12	**Exchange-of-value Settlement Systems**	Deemed to be "non-applicable" due to the fact that the question contents only apply to CCPs that clear cash markets (i.e. equities and bonds) and are linked to the CSD – JSE Clear does not clear cash markets and focuses exclusively on derivatives – hence, this principle is not applicable, and no responses have been given to these questions
20	**FMI Links**	Deemed to be "non-applicable" due to the fact that JSE Clear has no FMI links. The only other FMI in this market is Strate, and JSE Clear has no relationship with the CSD. We

		have no dependencies on other FMIs in South Africa, hence, this principle is not applicable, and no responses have been given to these questions
24	**Disclosure of Market Data by Trade Repositories**	This principle is not applicable to CCPs, in terms of Annex E of the "CPSS-IOSCO Principles for Financial Market Infrastructures" – therefore no response have been given to these questions

JSE Clear is satisfied that it has applied the correct level of scrutiny to the key considerations and questions related to the 4 principles listed above, and that the rationale for non-applicability stated here is factually correct. As a result, JSE Clear is only required to give detailed responses to 20 of the overall 24 CPSS-IOSCO principles, and these responses were issued to the regulator as part of a comprehensive compliance assessment.

JSE - Post-Trade Services Division